

G1
Wt
sunflower orf 522 sequence or by a male-sterility-conferring sequence with at least 90% homology with the sunflower orf 522 sequence, wherein said sunflower orf 522 sequence or said male-sterility-conferring sequence comprises polynucleotide sequences having the sequence shown in SEQ ID NOS:1 and 2.

G2
18. (Fourth Amended) A method of producing a plant of the chicory genus or reproducing material of a plant of the chicory genus exhibiting cytoplasmic male sterility, comprising integrating into a cell genome of said chicory plant a nucleotide sequence conferring male sterility borne by a sunflower orf 522 sequence or a male-sterility-conferring sequence with at least 90% homology with the sunflower orf 522 sequence, wherein said sunflower orf 522 sequence or said male-sterility-conferring sequence comprising polynucleotide sequences having the sequence shown in SEQ ID NOS:1 and 2.

REMARKS

Claims 12 and 15-18 are pending in the application. Claims 12 and 18 are amended to clearly set forth the nature of the invention and to overcome the Examiner's rejections under sections 112 and 103. Accordingly, claims 12 and 15-18 are presented for reconsideration in view of the remarks below. The amendments do not go beyond the original disclosure of the application.

In the October 7th Advisory Action, the Examiner stated that the amendments filed September 12th raised "new issues of art under 35 U.S.C. § 102(b) " and presented "broader claim language than was rejected in the Final action."

To address the Examiner's concerns and to expedite the allowance of the application, Applicants have amended pending claims 12 and 18 to be directed to chicory plants or to a male-sterility-conferring sequence with at least 90% homology to the sunflower orf 522 sequence. Support for this amendment is found in the specification at page 1, lines 34 - page 2, lines 1-2 and page 2, lines 16-19.

Claims 12 and 18, have been amended to clarify the subject matter of the invention without acquiescing to the correctness of the rejection. One of ordinary skill in the art does not have to engage in undue experimentation to practice the claimed invention. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejections under section 112, first paragraph.

Regarding the obviousness rejection under section 103(a), Applicants hereby incorporate the content of the amendment and arguments filed on May 13, 2002, in response to this rejection.

Claims 12 and 15-18 remain rejected under section 103, as being unpatentable over Rambaud (1994), in view of Rambaud (1993) and Laver (1991). The Examiner contends that Laver, at page 188, Figure 3, teaches SEQ ID NOS:1 and 2 and allegedly concludes that "it would have been obvious to use Laver's teachings to modify the teachings of Rambaud at the time of the Applicant's invention." Applicants respectfully traverse this rejection.

At the outset, the rejection has failed to establish a *prima facie* case of obviousness with respect to the claimed invention. The rejection must show all of the recited claim elements in the combination of references that underscore the rejection. When combining elements to make out a *prima facie* case of obviousness, that is, the rejection is obliged to show by reference to specific evidence in the cited references that there was (i) a suggestion to make the combination and (ii) a reasonable expectation that the combination would succeed. Both suggestion and reasonable expectation must be found within the prior art, and not be gleaned from Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Dow Chemical Co.*, 5 U.S.P.Q.2d 1529, 1531 (Fed Cir. 1988).

Rambaud (1994), at page 67(7), had indicated that their results were preliminary and did not allow them to determine whether the orf 522 gene was responsible for the CMS trait in chicory. As argued previously, "Rambaud (1994) only invites further experimentation to try to establish the identity of the DNA sequence(s) that conferred CMS. Such an invitation provides no more than 'general guidance as to the particular form of the invention or how to achieve it.' *In re O'Farrell*, 7 U.S.P.Q.2d 1673, 1681, (Fed. Cir. 1988); see generally M.P.E.P. § 2145." (Applicant's Reply to the Office Action dated June 19, 2001, page 6, Section 4).

In addition, Rambaud (1993), at page 351, column 1, fourth paragraph, lines 14-21, clearly states that:

"We were unable to determine whether the appearance of sterility in chicory is due to a transfer of the sunflower gene responsible for this characteristic, as suggested by Kohler *et al.* (1991) and by Laver *et al.* (1991), or whether the fusion process has given rise to a new chimeric

gene which would induce a new type of male sterility specific to chicory."

Accordingly, one of ordinary skill in the art would have no motivation to combine the secondary references relating to fusion techniques and orf 522 gene, and no reasonable expectation of success. Moreover, the Examiner has not provided any reasoning why these references can be combined. The level of skill in the art alone cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l. Inc.*, 174 F.3d 1308, 50 U.S.P.Q.2d 1161 (Fed Cir. 1999).

The rejection did not err in stating that Laver discloses the sequences that comprise SEQ ID NOS:1 and 2. Laver, however, fails explicitly or implicitly to suggest use of the sequences comprising SEQ ID NOS:1 and 2 for modifying Rambaud's teaching to make or practice the claimed invention. There is nothing in Laver that directs an artisan to choose these particular regions of the *atpA* gene for use in making a male sterile chicory plant as presently claimed. Even if Laver provides the suggestion to combine Rambaud's teachings, there is no reasonable expectation of success, as clearly concluded in Rambaud (1994) and Rambaud (1993). These references, at best, would have motivated the artisan to try to make the claimed invention. However, an "obvious to try" standard is an improper basis for applying an obviousness rejection.

Accordingly, the rejection has failed to make a case of *prima facie* obviousness, and as a result of these deficiencies, it is respectfully requested that the above rejection be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of this application are requested. An early notice in this regard is earnestly solicited. In the event that any issues remain, the Examiner is invited to contact the undersigned with any proposal to expedite prosecution.

Respectfully submitted,

Date: Feb. 12, 2003

By: Stephen B. Maebius

FOLEY & LARDNER
Customer Number: 22428

Stephen B. Maebius
Attorney for Applicant
Registration No. 35,264

22428

22428

PATENT TRADEMARK OFFICE

Telephone: (202) 672-5569

Facsimile: (202) 672-5399

Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

Version with Markings Showing Changes Made

12. (Fourth Amended) A recombinant chicory plant genome comprising at least one chicory gene and a nucleotide sequence conferring male sterility borne by a sunflower orf 522 sequence or by a male-sterility-conferring sequence with at least [50] 90% homology with the sunflower orf 522 sequence, wherein said sunflower orf 522 sequence or said male-sterility-conferring sequence comprises polynucleotide sequences having the sequence shown in SEQ ID NOS:1 and 2.

18. (Fourth Amended) A method of producing a plant of the chicory genus or reproducing material of a plant of the chicory genus exhibiting cytoplasmic male sterility, comprising integrating into a cell genome of [the] said chicory plant a nucleotide sequence conferring male sterility borne by a sunflower orf 522 sequence or a male-sterility-conferring sequence with at least [50] 90% homology with the sunflower orf 522 sequence, wherein said sunflower orf 522 sequence or said male-sterility-conferring sequence comprising polynucleotide sequences having the sequence shown in SEQ ID NOS:1 and 2.